

**TRANSLATION**

PATENT COOPERATION TREATY

**PCT**

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>TU04-0614WO1</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/JP2004/009981</b>	International filing date (day/month/year) <b>07.07.2004</b>	Priority date (day/month/year) <b>03.09.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>C23C14/34</b>		
Applicant <b>NIKKO MATERIALS CO., LTD.</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>1</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/009981

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:
- international search (Rule 12.3 and 23.1(b))
  - publication of the international application (Rule 12.4)
  - international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- the international application as originally filed/furnished  
 the description:

pages 1-13 as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the claims:

nos. \_\_\_\_\_ as originally filed/furnished

nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19

nos.\* 1 received by this Authority on 26.01.2005

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- the drawings:

sheets \_\_\_\_\_ as originally filed/furnished

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_
- the claims, nos. 2, 3 \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages \_\_\_\_\_
- the claims, nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/JP2004/009981

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																									
<p>1. Statement</p> <table> <tr> <td>Novelty (N)</td> <td>Claims</td> <td>1</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> <tr> <td>Inventive step (IS)</td> <td>Claims</td> <td></td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td>1</td> <td>NO</td> </tr> <tr> <td>Industrial applicability (IA)</td> <td>Claims</td> <td>1</td> <td>YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td>NO</td> </tr> </table>			Novelty (N)	Claims	1	YES		Claims		NO	Inventive step (IS)	Claims		YES		Claims	1	NO	Industrial applicability (IA)	Claims	1	YES		Claims		NO
Novelty (N)	Claims	1	YES																							
	Claims		NO																							
Inventive step (IS)	Claims		YES																							
	Claims	1	NO																							
Industrial applicability (IA)	Claims	1	YES																							
	Claims		NO																							
<p>2. Citations and explanations (Rule 70.7)</p> <p>Document 1: JP 9-260139 A (YKK Corp.), 03 October 1997      Document 2: JP 9-74015 A (Masuo OKADA), 18 March 1997      Document 3: JP 9-7832 A (NEC Corp.), 10 January 1997      Document 7: JP 9-316630 A (Mitsubishi Materials Corp.),                        09 December 1997      Document 9: JP 2002-193668 A (Nikko Materials Co., Ltd.),                        10 July 2002</p> <p>(1) The invention set forth in claim 1 does not involve an inventive step in the light of documents 1 to 3 and 7, which are cited in the international search report, and document 9, which is newly cited.</p> <p>Documents 1 to 3 disclose sputtering targets which correspond to the perovskite oxides that are represented by the chemical formula <math>Ra_{1-x}A_xBO_{3-\alpha}</math> (wherein Ra represents a rare earth element selected from among Y, Sc and the elements of the lanthanide series; A represents Ca, Mg, Ba or Sr; B represents a transition metal element such as Mn, Fe, Ni, Co or Cr; and <math>0 &lt; x \leq 0.5</math>). Meanwhile, document 7 and document 9 disclose perovskite oxide targets wherein the target is made to have a relative density of 95% or more via the application of pressure and sintering in order to prevent the fracturing of said</p>																										

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target (refer to the claims of documents 7 and 9); the average particle diameter of the grains that constitute the sintered compact is decreased in order to improve the transverse resilience of said sintered compact (refer to document 7, paragraph [0008]); the sintered compact is made to have a purity of 4N or higher in order to prevent the growth of the grains in said sintered compact (refer to document 7, paragraph [0011]); and the specific resistance of the target is decreased in order to increase the relative density of said target (refer to document 9, paragraph [0009]). Such being the case, it would have been easy for a person skilled in the art to conceive of configuring so that the perovskite oxide sputtering targets that are disclosed in documents 1 to 3 have a relative density of 95% or more, an average crystal grain diameter of 100 µm or less, a specific resistance of 10 Ωcm or less and a purity of 3N or higher.